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Author(s): David Lorenzo Schmidt, Louise H. Hope, and Martha J. Macri

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NOUN AND VERB MORPHOLOGY IN MICMAC HIEROGLYPHIC TEXTS

DAVID LORENZO SCHMIDT, LOUISE H. HOPE, AND MARTHA J. MACRI

University of California, Davis

1. HISTORY. Micmac, an Algonquian language of the Canadian Maritime Provinces, was recorded in a hieroglyphic script from at least the seventeenth century. The script has been presumed to be pictographic, with little or no morphology evident (Shea 1861, Daniels 1980, Hewson 1982). There are, however, reasons to question this presumption. The script had never been subjected to rigorous structural analysis, and even a cursory examination reveals a disproportionate level of complexity between signs for nouns and signs for verbs. Most nouns are unitary signs, while verbs are complex sign clusters which share a number of recurring markings. Some of these markings represent grammatical morphemes. To date we have identified signs for person, number, negation, and a locative marker.

It is believed that the signs were created by the French Recollect priest Chrestien LeClerc in the late seventeenth century. LeClerc writes that he took advantage of the Micmacs' propensity for scratching out marks on pieces of birch bark, marks claimed by the French to be understandable only to the individual who made them, by inventing a regularized system that all could read (LeClerc 1910 [1691]). Unfortunately, no texts from this early period are known to exist.

Abbé Pierre Maillard, who worked among the Micmacs forty-five years after LeClerc, also claimed invention of the hieroglyphic system. Since an engraving from the LeClerc period shows equivalent signs seen in later manuscripts, it seems that Maillard modified signs which the Micmacs continued to use after LeClerc returned to France in 1687.

Maillard's sign system is the basis for what remains today. He wrote a number of documents in the Micmac script, most notably a 1740 text in which he labeled each sign with a Micmac word using French orthography. A collection of Micmac documents was compiled by Father Christian Kauder in 1859, and published in 1866 (Lenhart 1921:ix). The hieroglyphic system appears to have fallen into disuse during the 1930's.

Thus French missionaries have been credited with the script's development and dissemination, while the Micmacs themselves have been credited with only minor stylistic influences. However, the lack of graphic elaboration of the pictographs for European-derived ecclesiastical terms such as 'Holy Ghost' and 'Christ', contrasted with the composite nature of the majority of the signs, suggests the possibility of multiple sources for the signs, one of which may have been indigenous. The artistic tradition of the Micmacs, seen in petroglyphs, embroidery, and quill work, is consistent with the design motifs present in the

hieroglyphs. The investigation of a possible indigenous origin for the writing system will be an area for future research.

2. DECIPHERMENT. The first step in this investigation has been to create an extensive word and morpheme list from texts in Kauder (1921 [1866]). At this stage our work has concentrated on assigning English glosses to signs, rather than on producing precise translations into Micmac. A large portion of the Kauder text consists of Catholic prayers and Biblical readings labeled in English, French, or Latin. We compared these passages with Latin and English versions in a modern Catholic missal (Lefebvre 1962), beginning with prayers such as the *Sanctus* and the *Agnus Dei* (Figure 1) in which repeated patterns of words and phrases are matched with repeated patterns of signs. Using this method, individual signs, for example 'holy' repeated three times at the beginning of the *Sanctus*, can be identified. Often, however, only an approximate matching of phrases is possible. Some decipherments have been confirmed by referring to the phonetic glosses in the Maillard manuscript (1740). These, in turn, were checked against a nineteenth century Micmac grammar (A. Maillard 1970 [1864]), as well as a modern Micmac dictionary (DeBlois & Metallic 1984).

LeClercq tells us that he instructed the Micmacs to write horizontally from left to right. Interestingly, person markers on verbs appear in the prefix position (to the left of sign roots) in spite of the fact that Micmac expresses person and number by suffixing. One explanation is that an earlier, indigenous system may have been written in some other direction or combination of directions; alternately, reading order within a sign cluster may reflect the vestiges of an older ordering tradition.

Analysis of the Kauder text is hampered by a variety of problems. First, and most obviously, the text itself is extremely corrupt. Not only was it developed from manuscripts copied by hand over several generations, but the last two stages—the master copy commissioned by Kauder, and the type design and setting—were almost certainly carried out without any knowledge of either spoken or written Micmac. Throughout Kauder there are variations and apparent inconsistencies. Some can be explained as copyists' overdifferentiations between forms that were in fact variants of the same sign. From one page—even one line—to the next, Maillard (1740) himself seems to be inconsistent. He offers the transliteration *eik* 'is', for three different sign clusters which have identical sign roots, but differ in affixes (Figure 2a). In some cases, it is not clear whether a variation is random or significant, as in Figure 2b, where Maillard has glossed one sign 'forever' and a slightly different sign 'eternal', and has provided three variations of a sign for the emphatic particle *eta*.

It is difficult to know to what extent Maillard's script records spoken Micmac. In the seventeenth and eighteenth centuries, the Catholic Church was still largely a Latin church. Only a few common prayers were said in the vernacular, and the linguistic training of the missionaries was rooted in Latin

grammar (Hanzeli 1969: 32ff). Intentionally or not, Maillard may have imposed French and/or Latin syntax on the texts.

3. SIGN ANALYSIS. Signs fall into two main groups: *main signs* and *affixes*. Main signs represent whole words or free morphemes, and appear alone or as roots in combination with affixes. Nouns show little or no affixing but do use duplication to represent plural (Figure 3a). Other non-affixed signs include particles and conjunctions, and some particles also appear as verb prefixes, possibly aspect markers. Verb roots can carry both prefixes and suffixes. Person marker prefixes seem limited to first and third person, singular and plural; the second person 'thou' is indicated by an independent sign (Figure 3b).

A few of the signs are clearly iconic, for example, a five-pointed star is used for 'heaven', a hand for 'hand', and a tipi for the verb 'dwell'. Other signs are based on European symbols: a triangle for God (the Holy Trinity?), the letter <A> for 'and' (Micmac *ak*), and the letter <J> embellished with a cross for the name 'Jesus Christ' (Figure 2c). The majority of the signs, however, are abstract with no obvious referent.

4. POSSIBLE EVIDENCE FOR PHONETICISM. The Micmac script appears to be logographic; we have found only tentative evidence for the phonetic use of signs. A *v-shaped* marking is used in a horizontal position as a third person ending *-k*, and doubled for the third person plural ending *-kik* (as in the first and second signs of Figure 3b). This in itself is not necessarily indicative of phoneticism since other signs are also duplicated to indicate plural. However, two of the same *v-shaped* signs are used in a vertically-oriented diamond pattern as a locative ending following place names (Figure 3c). The locative suffix in Micmac is *-k*. This suggests that in spite of positional rotation, the *v-shaped* signs may have signified the sound /k/ independent of semantic distinctions.

5. TEXT ANALYSIS. A sample analysis of a specific passage illustrates the value of matching repeated patterns of signs with phrases repeated in the Latin version of the text (our methods here follow Fell 1976--our conclusions do not). Figure 4a shows three verses from Psalm 115 (113b) captioned *In Exitu Israel* in Kauder (1866:280). In Figure 4b the six parallel phrases are separated into their component parts. The passage refers to the idols of the heathen, who have "...mouths but do not speak, they have eyes but do not see, ears but do not hear, noses but do not smell, hands but do not touch, feet but do not walk." This text is especially valuable because it contains six variations of a single phrase, and because within each there is a corresponding noun/verb pair (mouths/speak, eyes/see, etc.). Organizing the passage in table form allows separation and identification of individual graphemes, and further, has the advantage of demonstrating that slight variations in size and shape do occur in equivalent signs, as with the third person marker which may be quite small as in the third phrase, or larger and more flared as in other examples.

There are eight positions in each phrase, each position corresponding to a word class, although no phrase has every position filled. All but the first phrase begins with the doubled *v-shaped* sign which we have identified above as the third person plural. All of the phrases also have a noun, a negative marker, and a phrase-final verb. A sign cluster in position two, appearing only in the second phrase of the passage, may be related to the verb 'have' which is a component in the Latin version but has no corresponding sign in the hieroglyphic text. Notably, a conjunction, whose identification is confirmed in Maillard (1740) as 'while' or 'but', occurs in position four in all but the second phrase. The design resemblance between the possible verb signs in phrase two and the conjunctions suggests some degree of substitutability between them.

The negative marker is an example of the range of sign variation that occurs, even within a single passage. Whether the graphic representations of the Micmac negative *mu* in the fourth and fifth phrases reflect differences in speech is doubtful, but cannot be ruled out. Similarly, the pattern of co-occurrence of the signs in positions six and seven may reflect absence of these morphemes, or simply graphic variation.

6. SUMMARY. The discovery that the Micmac script is not simply a mnemonic prompt, but, in fact, reflects grammatical features of spoken Micmac, provides linguists with a new source of diachronic data. As a non-alphabetic writing system, the deciphered script can contribute to understanding the cognitive and cultural processes involved in the visual representation of language.






For future research there remain large portions of the Kauder text to be systematically studied in order to expand the hieroglyphic lexicon. Other extant documents must be located and deciphered. Further research must be conducted in the light of a more complete knowledge of the Micmac language. Ethnohistorical and archaeological research may offer further evidence for a possible indigenous origin of the script.

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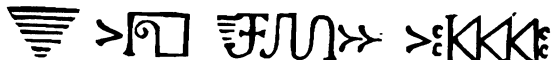
Sanctus

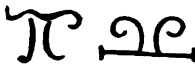
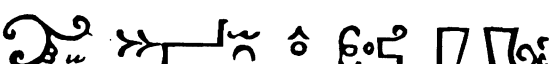
Holy holy, holy. Lord God of Hosts heaven




and earth are full of your glory

Hosanna in the highest! Blessed










is he who comes in the name of the Lord.











Hosanna in the highest!

Agnus Dei

Lamb of God, who takes away the sins of the world, have mercy on us.

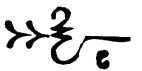
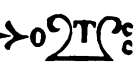
Lamb of God, who takes away the sins of the world, have mercy on us.







Lamb of God, who takes away the sins of the world,

grant us peace.

Figure 1. Fitting patterns of known prayers to hieroglyphic signs.

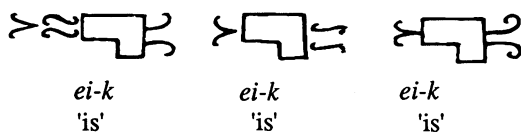


Figure 2a. Three versions of 'is'.

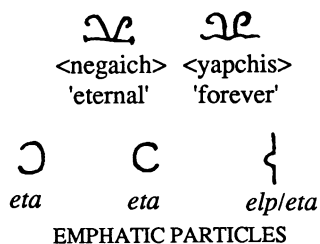


Figure 2b. Sign variation.

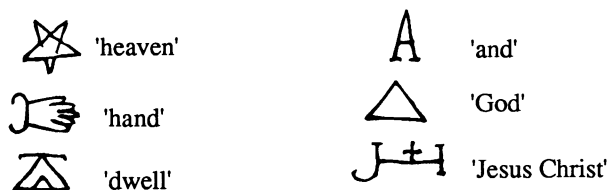


Figure 2c. Iconic and abstract signs.

F or E		ZE or ZE	
	'son, child'		'sons, children'
☉ T	'angel'	☉☉ TT	'angels'
2	1st SG	22	1st PL
> or S	3rd SG -k	>>	3rd PL -kik

Figure 3a. Plural indicated by duplication.



Figure 3b. Verbs with affixes, and 'thou'.

^	B:~	B~	5~
-k LOCATIVE	'(in) Bethlehem' <Bethlehem-ek>	'(in) Egypt'	'(in) Israel'

Figure 3c. Locatives.

𐤀 𐤋 𐤓 𐤌 𐤍 𐤎 𐤏 𐤐 𐤑 𐤒 𐤓 𐤔 𐤕 𐤖 𐤗 𐤘 𐤙
 𐤚 𐤛 𐤜 𐤝 𐤞 𐤟 𐤠 𐤡 𐤢 𐤣 𐤤 𐤥 𐤦 𐤧 𐤨 𐤩
 𐤪 𐤫 𐤬 𐤭 𐤮 𐤯 𐤰 𐤱 𐤲 𐤳 𐤴 𐤵 𐤶 𐤷 𐤸 𐤹
 𐤺 𐤻 𐤼 𐤽 𐤾 𐤿

Figure 4a.

	1.	2.	3.	4.	5.	6.	7.	8.
1.			𐤀 𐤋	𐤓 𐤔	𐤕 𐤖	𐤗 𐤘		𐤙 𐤚
			'mouths'					'speak'
2.	𐤛 𐤜	𐤝 𐤞	𐤟 𐤠		𐤡 𐤢	𐤣 𐤤		𐤥 𐤦
			'eyes'					'see'
3.	𐤧		𐤨 𐤩	𐤪 𐤫	𐤬 𐤭	𐤮 𐤯	𐤱	𐤲
			'ears'					'hear'
4.	𐤴		𐤵 𐤶	𐤷 𐤸	𐤹 𐤺		𐤻 𐤼	𐤽 𐤾
			'noses'					'smell'
5.	𐤿		𐤁 𐤂	𐤃 𐤄	𐤅 𐤆	𐤇 𐤈	𐤉 𐤊	𐤋 𐤌
			'hands'					'touch'
6.	𐤍		𐤎 𐤏	𐤑 𐤒	𐤓 𐤔	𐤕 𐤖	𐤗 𐤘	𐤙 𐤚
			'feet'					'walk'

Figure 4b. Psalm 115 (113b):5-7.